and said lower stationary element so as to allow their relative rotation about a common axis with limited axial relative displacement, thereby transferring a reaction force produced by the jet in a plane passing through said common axis;

braking means to counter the relative rotation of said upper and said lower elements about said rotation axis;

said connecting means comprising a substantially cylindrical tubular connecting element with substantially constant outer diameter;

said tubular connecting element being a section of predetermined length cut from an indefinite pipe having a substantially cylindrical outer surface with no annular flange, said section of pipe being rigidly secured to one of said upper and lower element with at least part of said substantially cylindrical outer surface, said braking means being separate from said tubular connecting element, a sleeve of substantially cylindrical shape being rigidly attached to one of said upper and lower elements for interacting with said braking means to controllably counter the rotation of said upper rotatable element.

15. The self-adjusting rotating joint according to claim 14 wherein said tubular connecting element is rotatably coupled to the other of said upper and lower elements with the interposition of at least one antifriction annular member.

16. The self-adjusting rotating joint according to claim 14 wherein said tubular connecting element is fixedly attached to said upper rotatable element.

17. The self-adjusting rotating joint according to claim 16 wherein said sleeve

has a flange interacting with said braking means to controllably counter the rotation of said upper rotatable element.

18. The self-adjusting rotating joint according to claim 17 wherein said braking means comprise pads of material with high wear resistance, adapted to interact with substantially annular braking surfaces unitarily joined to said flange.

19. The self-adjusting rotating joint according to claim 16 wherein said sleeve is rigidly secured to an end portion of said lower stationary element and is placed peripherally of said tubular connecting element.

20. The self-adjusting rotating joint according to claim 19 wherein said sleeve has a substantial cylindrical central portion connected to axial end portions adapted to house substantially annular braking pads.

21. The self-adjusting rotating joint according to claim 20 wherein said annular braking pads have internal cylindrical surfaces in friction contact with said tubular connecting element to transfer the reaction to the force exerted by the jet in an axial plane passing through said common axis, and planar annular surfaces acting on braking surfaces connected to said upper rotatable element to controllably counter its rotation with respect to said lower stationary element.

22. The self-adjusting rotating joint according to claim 14 wherein said tubular connecting element is unitarily fixed to said lower stationary element.

23. The self-adjusting rotating joint according to claim 22 wherein annular members are rigidly fixed to said upper rotatable element, said annular members being axially spaced and being interposed between said tubular connection element and said upper rotatable element to define a friction pad and to transmit to said lower stationary element forces acting on said upper rotatable element.

24. The self-adjusting rotating joint according to claim 22 wherein said sleeve is rigidly coupled to said upper rotatable element and is provided with a flange interacting with said braking means.

25. The self-adjusting rotating joint according to claim 24 wherein said braking means consist of pads unitarily secured to said flange on opposite sides thereof and adapted to interact with braking surfaces defined by substantially annular elements of high wear resistance material.

26. The self-adjusting rotating joint according to claim 18 wherein said pads are shaped as continuous rings or circular sectors circumferentially spaced and placed peripherally of said sleeve, elastic means being provided to force said pads against said braking surfaces.